

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of Review of
Resolution No. 77-6 (Relating
to the City of Arcata) of the
California Regional Water
Quality Control Board, North
Coast Region. Our File
No. A-175.

WQ 77-21

BY THE BOARD:

The City of Arcata (City) has proposed a wastewater project involving a final discharge to Humboldt Bay (Bay). On June 24, 1977, the California Regional Water Quality Control Board, North Coast Region (Regional Board) considered the City's proposal and adopted Resolution No. 77-6, indicating waste discharge requirements should not be issued for such a discharge because the City had failed to demonstrate that the proposed project would comply with the Water Quality Control Policy for the Enclosed Bays and Estuaries of California (Policy).^{1/} On August 18, 1977, the State Water Resources Control Board (State Board) resolved on its own motion to review Resolution No. 77-6 and on September 12 and 13, 1977, the State Board held a hearing to receive evidence relating to this matter.^{2/}

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1. Resolution No. 74-43, State Water Resources Control Board.
 2. Resolution No. 77-70, State Water Resources Control Board.

I. BACKGROUND

Humboldt and Arcata Bays (Bay) are located in northwestern California at Eureka, California. The Bay is approximately 16,000 acres in size and is among the more productive and active ecosystems in California.^{3/} Beneficial uses made of the Bays waters include: scenic enjoyment, fish and wildlife habitat, water-oriented recreation, commercial fishing, navigation, industrial water supply and educational study.^{4/} The most sensitive of these is its use as a shellfish production area. The evidence received at the State Board's hearing indicated that over 80% of the State's commercial oyster harvest comes from the Bay and that the value of the harvest in 1977 will be \$1 million.

Current efforts to improve wastewater facilities in the Bay area date from about 1970. At that time, most Bay communities thought to upgrade existing waste treatment facilities and continue discharging to the Bay. However, in 1974, the Bays and Estuaries Policy prohibiting the discharge of wastewater to enclosed bays and estuaries except under certain limited circumstances was adopted and new plans for the disposal of municipal wastewater were formulated. As matters now stand, Arcata, the City of Eureka, the McKinleyville Community Services District, County Service Area No. 3 and portions of Humboldt County have

3. See the Natural Resources of Humboldt Bay, Department of Fish and Game, 1973.

4. For a detailed description of these uses, see Water Quality Control Plan Report, North Coastal Basin (1B), Part I, Section I, Chapter 1, pp. 6-8.

entered into a contractual agreement to jointly collect, treat and dispose of their wastewater to the ocean through the Authority, a joint powers agency.^{5/}

The City discharges its wastewater currently to the Bay but is subject to waste discharge requirements which prohibit further discharge to the Bay "upon completion and initial operation of the Humboldt Bay Regional Wastewater Treatment Facilities."^{6/} The City has proposed and sought approval, from the Regional Board, for a separate waste treatment facility which would discharge to the Bay. In broad terms, the City proposes to upgrade its existing waste treatment facilities, and to add to those facilities a freshwater marsh and recreation lake. Wastewater passing through the treatment facilities, the marsh and the lake would be discharged, ultimately, to the Bay.

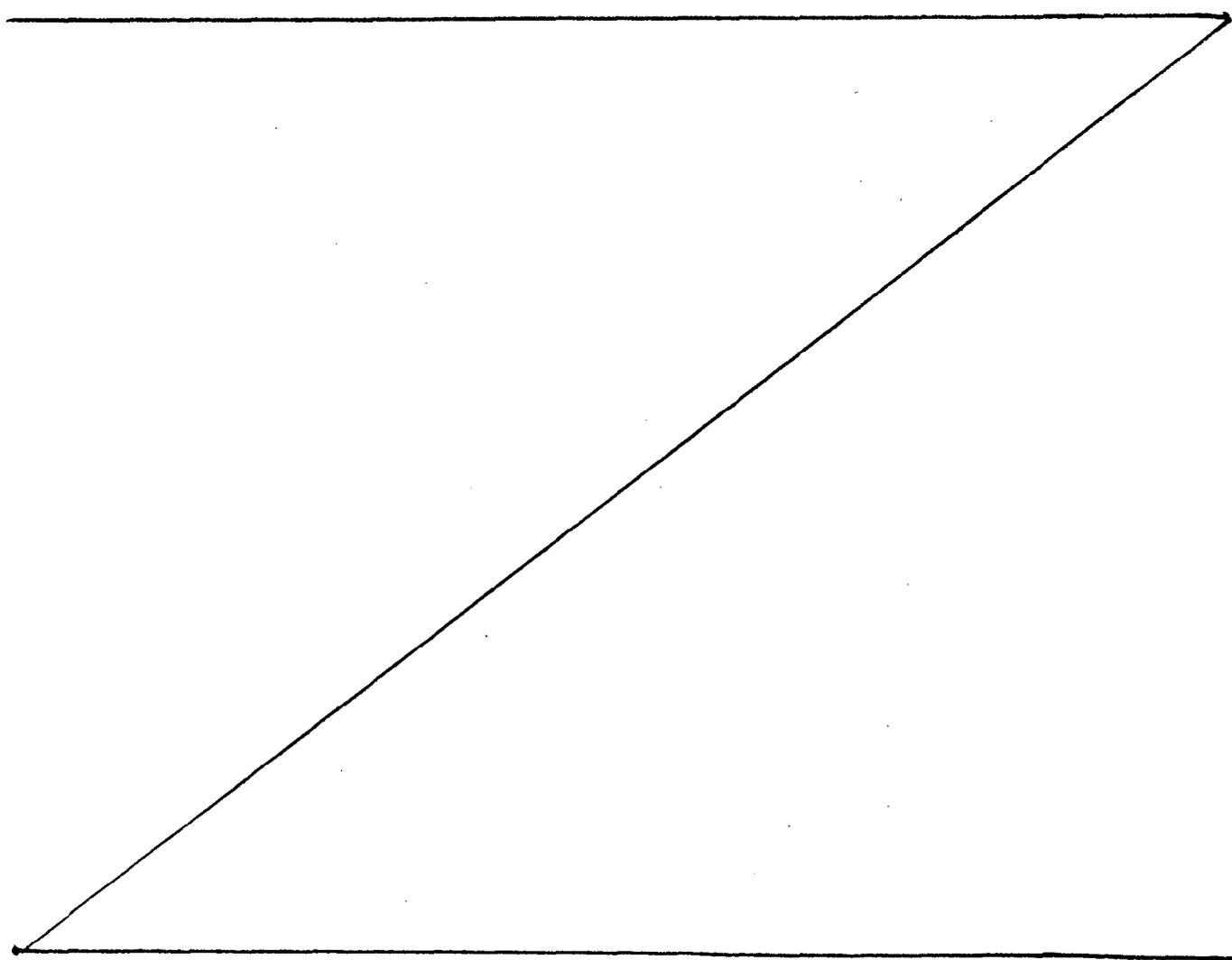
II. THE BAYS AND ESTUARIES POLICY

The Policy provides in part:

"It is the policy of the State Board that the discharge of municipal wastewater...to enclosed bays and estuaries... shall be phased out at the earliest practicable date. Exceptions...may be granted...only when...the wastewater in question would consistently be treated and discharged in such a manner that it would enhance the quality of receiving waters above that which would occur in the absence of the discharge."^{7/}

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5. It should be noted that the Authority has opened bids for construction of secondary waste treatment facilities and the contract for construction must be awarded by October 9, 1977, unless the contractor will grant the Authority additional time.
 6. Regional Board Order No. 76-141, Discharge Prohibition B.1 and Provision C.3.
 7. Arcata and Humboldt Bays are subject to the Policy.

When presented with the issue of adopting this policy, the State Board chose to require removal of wastewater discharges from enclosed bays and estuaries unless enhancement of the receiving waters could be demonstrated. The rationale for this policy was that enclosed bays and estuaries are the most biologically productive area on earth. They provide critical habitat for countless marine organisms. The rich nutrient loadings in the estuarine entrapment zone are essential to all anadromous fishes. At the same time, enclosed bays and estuaries are especially vulnerable to discharges of wastewater due to their capacity to "trap" pollutants.



III. ISSUES

In setting this matter for a hearing it was indicated that the State Board would accept testimony and evidence on the following issues.

1. Will the proposed discharge comply with the requirements of the Bays and Estuaries Policy as set forth in the memo of October 21, 1974 from Bill B. Dendy to David Joseph specifically:
 - a. Will the proposed discharge create a new beneficial use or enhance existing beneficial uses in the receiving waters of the Bay?
 - b. Will the effluent limits proposed by the City optimize conditions for realization of any beneficial uses identified under issue a?
 - c. Will the proposed discharge compromise any beneficial uses which could be made of the receiving water in the absence of the proposed discharge to the Bay?
 - d. Will any benefits from the proposal be commensurate with the incremental costs, if any, of such a project over and above alternatives not involving in-Bay disposal?

2. Should the proposed discharge be permitted even if it cannot be demonstrated that the discharge complies with the criteria listed in numbered paragraph 1, above?

3. What impact would the City's withdrawal from the Humboldt Bay Wastewater Authority have on the Authority's proposed project for secondary waste treatment with an ocean discharge?

We believe these issues provided all interested persons the opportunity to fully develop their respective viewpoints while also providing this Board with the necessary information to make an appropriate decision. We will now consider the information in the record with respect to these issues.

IV. DISCUSSION AND FINDINGS

Because of the susceptibility of bays and estuarine ecosystems to waste discharges and because of their great value to the people of the state, the burden placed by this Board on those who wish to discharge to a bay or estuary (that is, the burden to show enhancement of the water quality of the receiving waters in accordance with the Bays and Estuaries Policy) is a heavy one.

Arcata presented no evidence directly on issue number 2, above, i.e., whether its discharge should be permitted even if compliance with the Bays and Estuaries Policy cannot be demonstrated.

The City, in fact, opened its presentation at the State Board hearing with a statement to the effect that it was not requesting a relaxation of the Policy but that it intended to demonstrate that its discharge to the Bay could be permitted in conformity with the enhancement requirement. To this end, the City presented considerable testimony. Among the topics addressed by the City were the following:

- The existing waste treatment system, the proposed waste treatment system and its anticipated operation; 8/
- The capability of the proposed waste treatment system to store and treat peak wet weather wastewater flows, without bypass to the Bay, while providing high levels of treatment; 9/
- The predicted concentration of pollutants which would enter the Bay from the proposed facility; 10/
- The ability of the proposed marsh and recreation lake to operate adjacent to an abandoned landfill without leachate complications; 11/
- The viability of the proposed series of ponds and/or lagoons as a method of waste treatment technology; 12/
- The existence of a treatment facility which uses a substantially similar method of waste treatment and disposal, including the

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8. Mr. Frank R. Klopp, Engineer, City of Arcata.
 9. Mr. Frank R. Klopp and Dr. Robert A. Gearheart.
 10. Drs. Robert A. Gearheart and George H. Allen.
 11. Dr. Robert A. Gearheart.
 12. Dr. William Oswald.

discharge of wastewater to a marsh, and which is currently in operation on an experimental basis;^{13/}

--The ability of the City's proposed system to discharge to the Bay without adversely affecting aquatic life and, more particularly, the commercially important oyster grounds in the Bay.^{14/}

In spite of the City's efforts, as summarized above, we are unable to find that the City has demonstrated the reliability and effectiveness of its proposed approach with the kind of certainty we feel is necessary to justify proceeding with a bay discharge. Based upon evidence presented by the State Board staff, the Department of Fish and Game, the Regional Board, the Coast Oyster Company and the Department of Health, we continue to feel that the following concerns have not been fully resolved:

- Can the proposed marsh and recreation lake be operated adjacent to an abandoned landfill without creating water quality or public health problems due to leachate?
- What will be the interaction, if any, between algae, ammonia, pH and temperature within the proposed marsh and lake, that is, can a non-toxic effluent be assured?
- Will existing beneficial uses of the Bay, including shellfish production, be consistently protected (i.e., will reliable protection be afforded against discharges of untreated or partially treated wastewater)?

13. Mr. Warren Nute, Engineer

14. Drs. Robert A. Gearheart, George H. Allen and Robert Busch.

- Can the proposed aquaculture project be reliably operated, particularly on the commercial scale proposed by the City?
- Does the Bay ecosystem have a carrying capacity which would support an increased salmonid population after release from the City's facilities even if aquaculture can be reliably carried on within the City's facilities?
- Will Humboldt Bay be enhanced as a result of a bay discharge?

Pursuant to its Bays and Estuaries Policy, the Board will not approve continued discharge to Humboldt Bay until a convincing showing that every reasonable risk of pollution of or harm to the Bay's valuable resources has been eliminated.

The Board places high priority on the development of low-energy consumption, low-cost alternative treatment schemes. At the same time, the Board cannot allow the exploration of new approaches and treatment alternatives to go on indefinitely or to become an excuse for inaction. Particularly, in the case of discharges to valuable and sensitive estuaries, pollution control measures must be taken promptly.

The history of development of the Authority's proposed project is a lengthy one. Serious water quality problems have been recognized in the Humboldt Bay Area since 1970. Currently, the City of Eureka has one overloaded secondary treatment plant and two primary plants, one of which is overloaded, all of which discharge to Humboldt Bay. Arcata's system (primary treatment plus ponds) does not consistently meet discharge requirements. The violations consist of: (1) unreliable disinfection, (2) anaerobic

pond conditions, (3) toxicity of the effluent, and (4) lack of compliance with standard laboratory methods for self-monitoring. McKinleyville Community Service District has a large number of failing septic tanks constituting a serious public health hazard. Humboldt County Service Area No. 3 (CSA No. 3) has three oxidation ponds which provide inadequate levels of treatment and discharge to Humboldt Bay. The unsewered areas have problems similar to McKinleyville. Finally, the Humboldt Community Services District (CSD) provides collection services only, with their flows being treated by Eureka. There are also unsewered areas with failing septic tanks. Planning work for the regional project intended to solve these problems, began in 1973 and culminated in State Water Resources Control Board approval of the Authority's proposed project in 1975 to consolidate all treatment facilities into one regional plant on the Samoa Peninsula.

In 1974 Arcata, faced with a decision as to whether to join the Authority or to proceed on its own sought direction from the State Board regarding what it would be required to demonstrate in order to continue a bay discharge. Detailed guidance was given both during a personal visit to Arcata by Mr. Robie, then a member of the State Board, and Mr. Walker, then Chief of the Division of Water Quality, on October 1, 1974, and by Mr. Dendy's memo to Dr. Joseph, cited above.

The City of Arcata was also informed that any study of enhancement and/or reclamation should begin immediately so that the results could be utilized in any project for the Humboldt Bay Area. The State Board requested that all information relating

to enhancement and/or reclamation be submitted by January 15, 1975;¹ however, no data was ever submitted by the City. After these years of study, the communities in the Humboldt Bay Area finally applied for a construction grant from this Board. That grant was made nearly one year ago.

Despite this history, we believe that the Arcata proposal has sufficient potential for cost and energy savings and provision of wildfowl habitat to merit further investigation if it can be accomplished without delay. The State Board will seriously consider an application by the City of Arcata for funding of a pilot project to explore the feasibility of a full-scale project. Dr. Oswald, a key Arcata expert witness, in response to a question of a State Board Member stated he would want to have a pilot program undertaken and evaluated before proceeding with the full-scale project.

The Board's staff has suggested that should Arcata's system be proven after development and operation for a suitable period to provide the requisite protection of Humboldt Bay, Arcata could sell to the other entities its presently contracted capacity in the regional system. Since the system provides only ten years' capacity, the other Bay communities might well be interested in such a purchase.

Alternatively, we suggest that members of the Authority work out an approach whereby the interceptor running from Eureka to Arcata could be the last regional treatment system component scheduled for construction. This would provide Arcata some two to three years to prove out its proposed approach. If at that time

15/ See letter from Ron Robie to Roger Storey dated November 6, 1974
Letter? - Not attached!

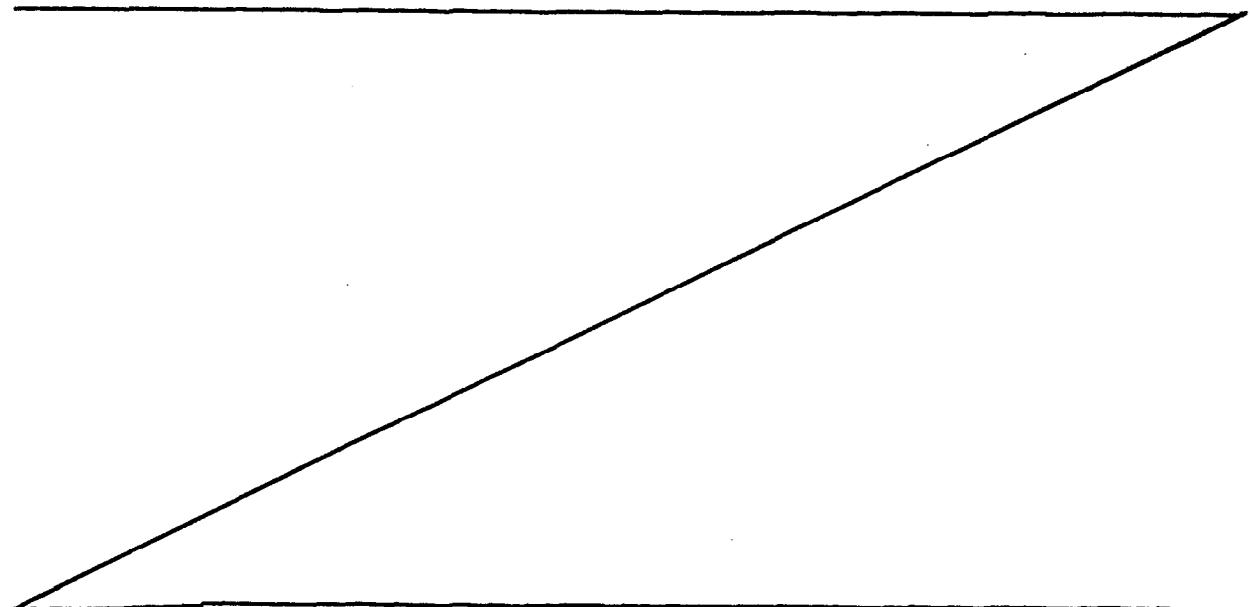
Arcata made a showing of enhancement based on operation of a pilot project which could be approved by the Regional Board or this Board, construction of the interceptor to Arcata would be modified accordingly. The Board's staff is working now and will continue to work with the parties on these approaches.

In any event, this Board will not allow a discharge to Humboldt Bay until full protection and enhancement have been demonstrated. We cannot make a finding that the proposed alternative will result in enhancement of Humboldt Bay on the basis of the current record.

V. CONCLUSIONS

For the reasons fully discussed above, we conclude as follows:

(1) California's bays and estuaries are a resource of the highest value to the people of the State and are particularly sensitive to the effects of waste discharges.



(2) In order to adequately protect these important resources, the State Board's Water Quality Control Policy for the Enclosed Bays and Estuaries of California places a heavy burden on anyone proposing a discharge to a bay or estuary to demonstrate that the discharge will enhance the quality of receiving waters and Arcata has not presently met that burden.

VI. ORDER

IT IS HEREBY ORDERED that: (1) the action of the Regional Board in adopting Resolution No. 77-6 is upheld and (2) the State Board will seriously consider an application by the City of Arcata for funding of a pilot project to explore its proposed alternative project in detail.

Dated:

Sept 22, 1977

LSI

John E. Bryson, Chairman

LSI

W. Don Maughan, Vice Chairman

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W. W. Adams, Member